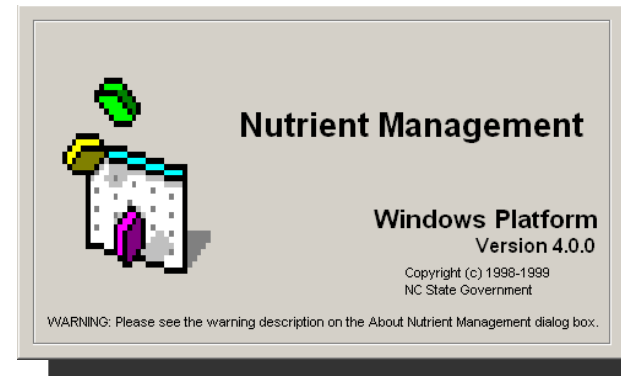


# N.C. Nutrient Management Software



# Module 1

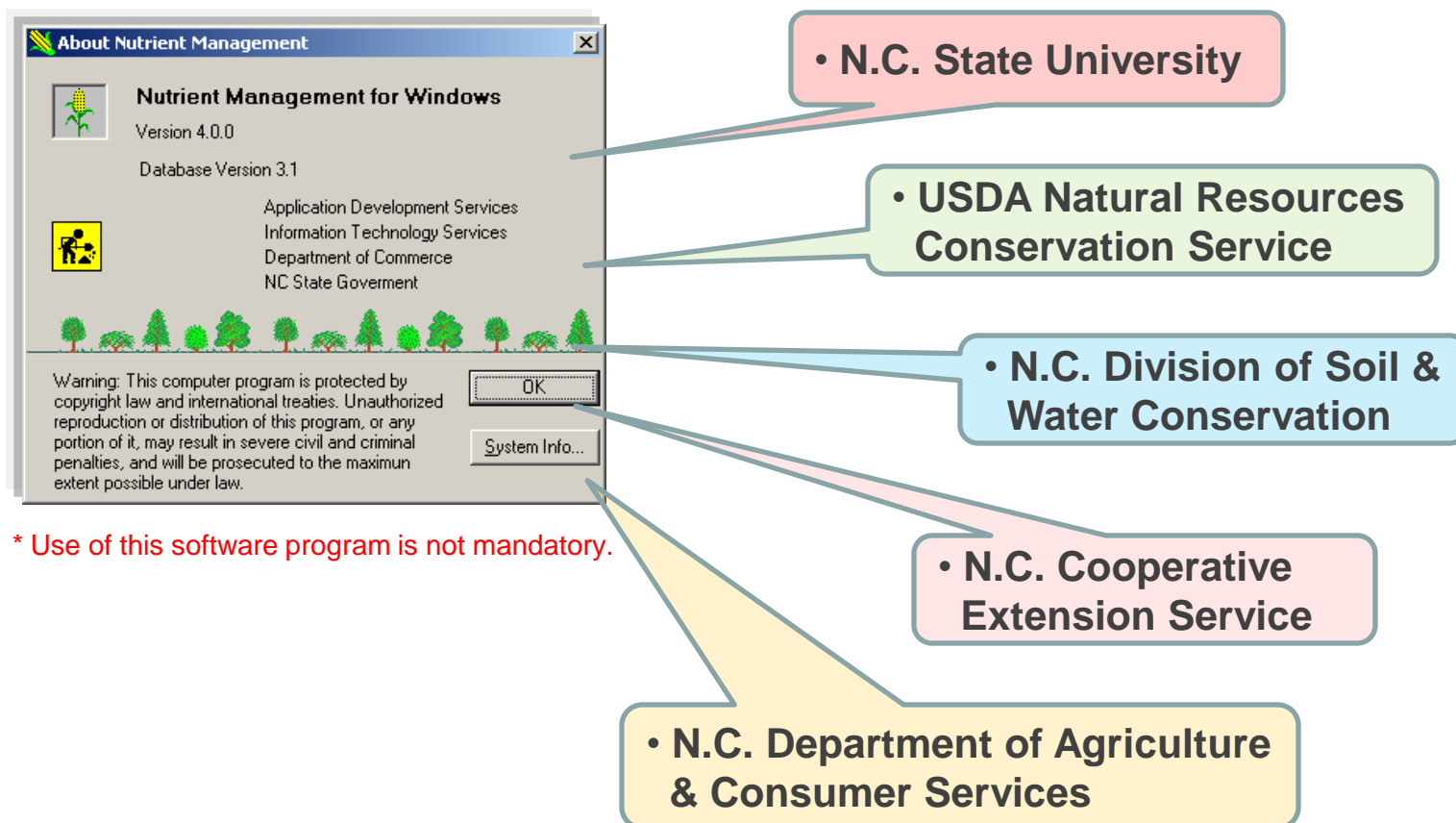
## Introduction & Basics



- Background and Context.....(3-5)
- Download/Set-Up.....(6-7)
- Get Started - Main Screen / Toolbars.....(8-10)
- The System Tree.....(11)
- Developer .....(12-13)
- Agency.....(14-15)
- Producer.....(16)
- Farm.....(17)
- Tracts.....(18)
- Fields.....(19-20)
- Leaching Index.....(21-22)
- Soil samples (Manual Entry & Import).....(23-25)
- Crop Rotations.....(26-28)

# The N.C. Nutrient Management Software

Developed as a cooperative effort



# The N.C. Nutrient Management Software

## Scientific, Technical & Regulatory Content

- USDA-NRCS 590 Nutrient Management Standard.
- USDA-NRCS 633 Waste Utilization Standard.
- NCDA “Crop Fertilization Based on N.C. Soil Tests”.
- 0.0200 Rules / SB1217
- North Carolina Nutrient Management Workgroup. 2003. Realistic yields and nitrogen application factors for North Carolina crops.  
<http://nutrients.soil.ncsu.edu/yields/>



# Nutrient Management Program addresses the **Waste Utilization Plan**

<b>Waste Utilization Plan Minimum Contents SB1217</b>		<b>Nutrient Management Software</b>	<b>Operation &amp; Maintenance</b>	<b>Maps: FSA, ArcMap</b>
1	List of all fields receiving waste by tract number, field number, and acres; wettable or effective acres as appropriate.	√		
2	Maps of all fields to be used for waste application.			√
3	Amount of manure produced and used annually	√		
4	Waste application method	√		
5	All crops to be grown by field	√		
6	Realistic yield expectations (RYE) for intended crops	√		
7	Dominant soil series for each waste application field	√		
8	N application rate by field	√		
9	<b>Annual N balance = pounds of N generated minus pounds of N taken up by crops (balance must be ≤ zero)</b>	√		
10	Waste application windows	√		
11	Irrigation parameters where irrigation is used		√	
12	Calibration information		√	
13	Required specification from NRCS Waste Utilization Standard Code 633	√		
14	Emergency action plan	√		
15	Odor checklist	√		
16	Insect checklist	√		
17	Mortality checklist	√		
18	Waste sampling within 60 days of land application		√	
19	Annual soil sampling		√	



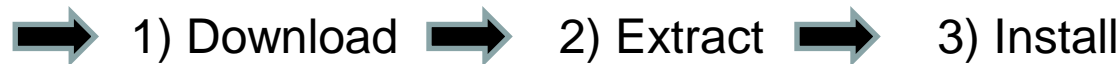
# N.C. Nutrient Management Software: Download & Set-Up

<http://nutrients.soil.ncsu.edu/nmp/index.htm>



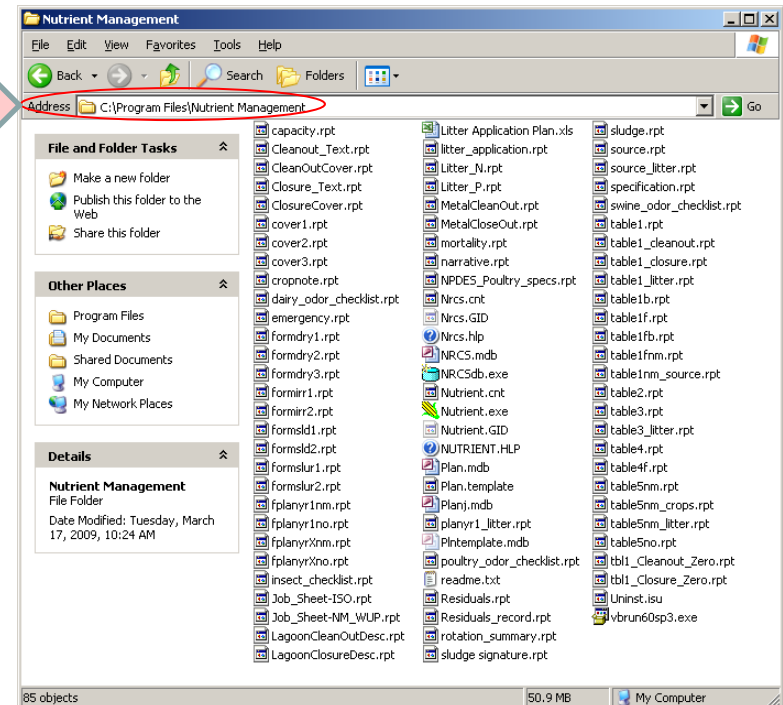
## N.C. Nutrient Management Software: Download & Set-Up

<http://nutrients.soil.ncsu.edu/nmp/index.htm>



Initial Setup will automatically generate a folder named **C:\Program Files\Nutrient Management** and install all necessary files to run the Nutrient Management Program.

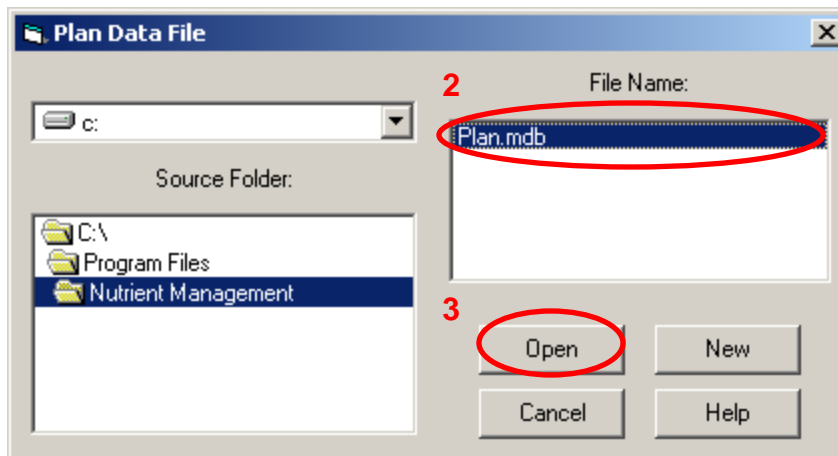
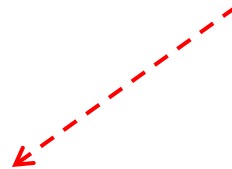
*Unless you choose an alternative installation configuration, all necessary files will be installed in this folder.*



# 1) Get Started

1) Double-click the **Icon** and the Plan Data File box will appear.

1

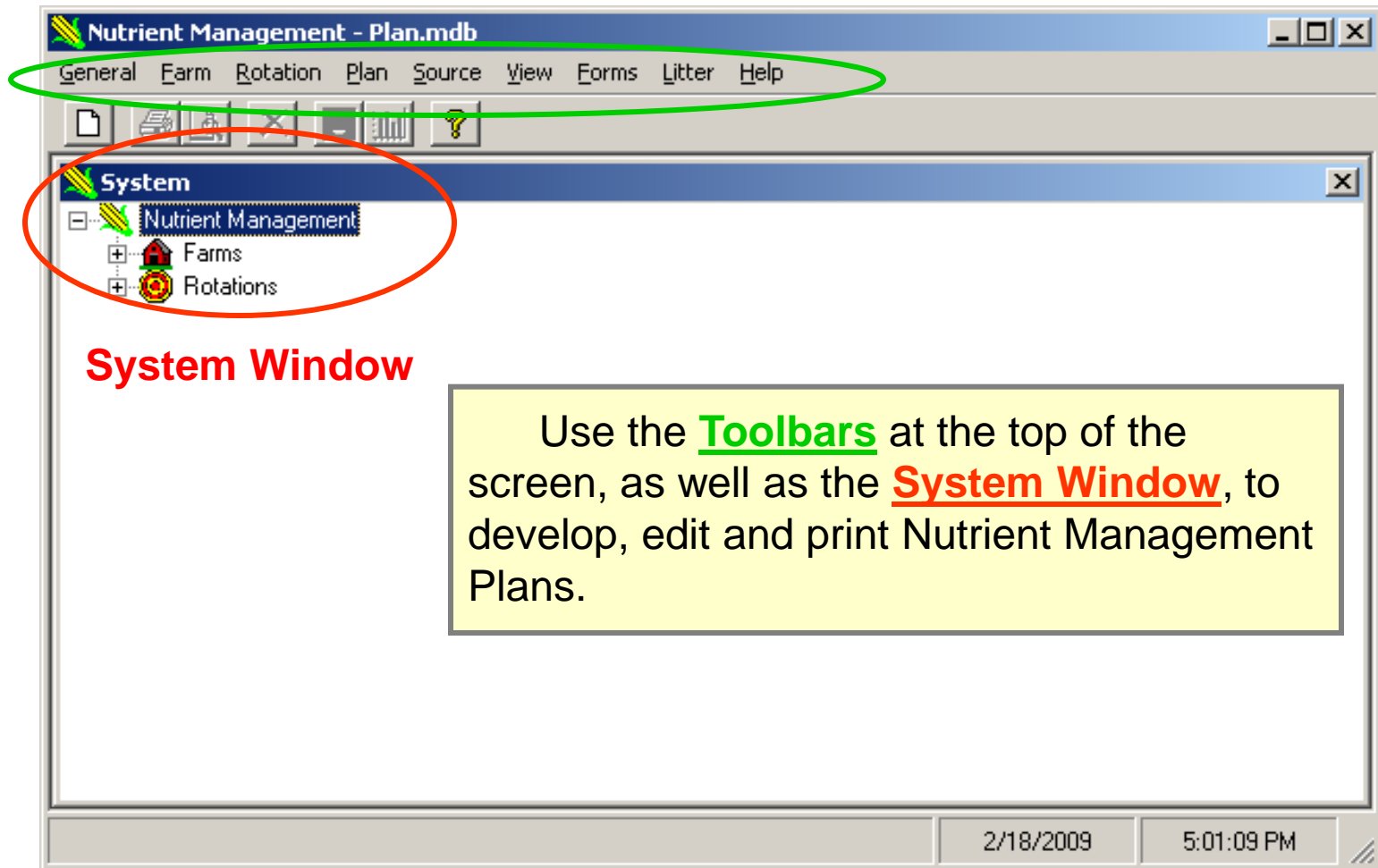


2) Select the **File Name** "Plan.mdb"  
3) Click **Open**



## 2) Main Nutrient Management Screen

Toolbars



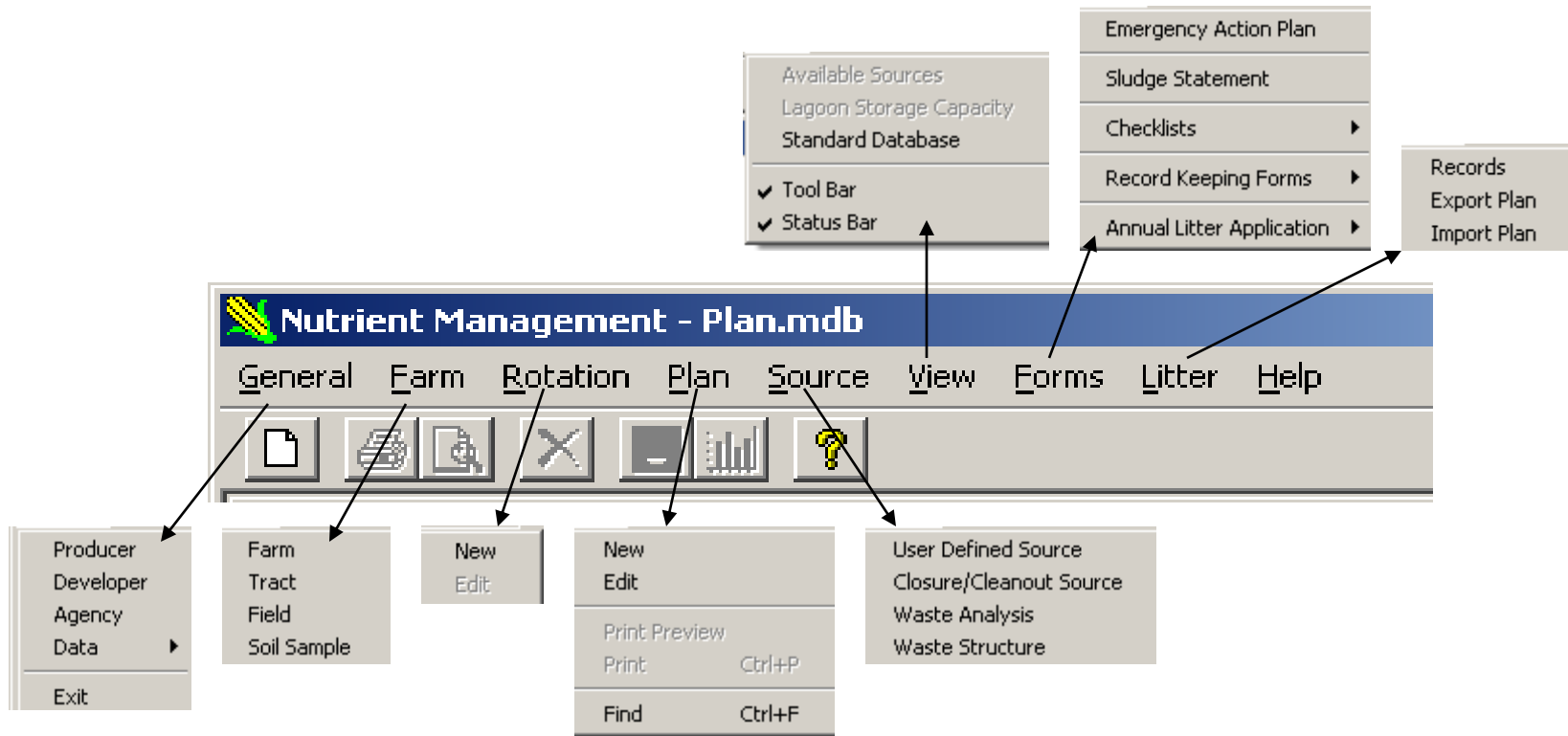
System Window

Use the Toolbars at the top of the screen, as well as the System Window, to develop, edit and print Nutrient Management Plans.

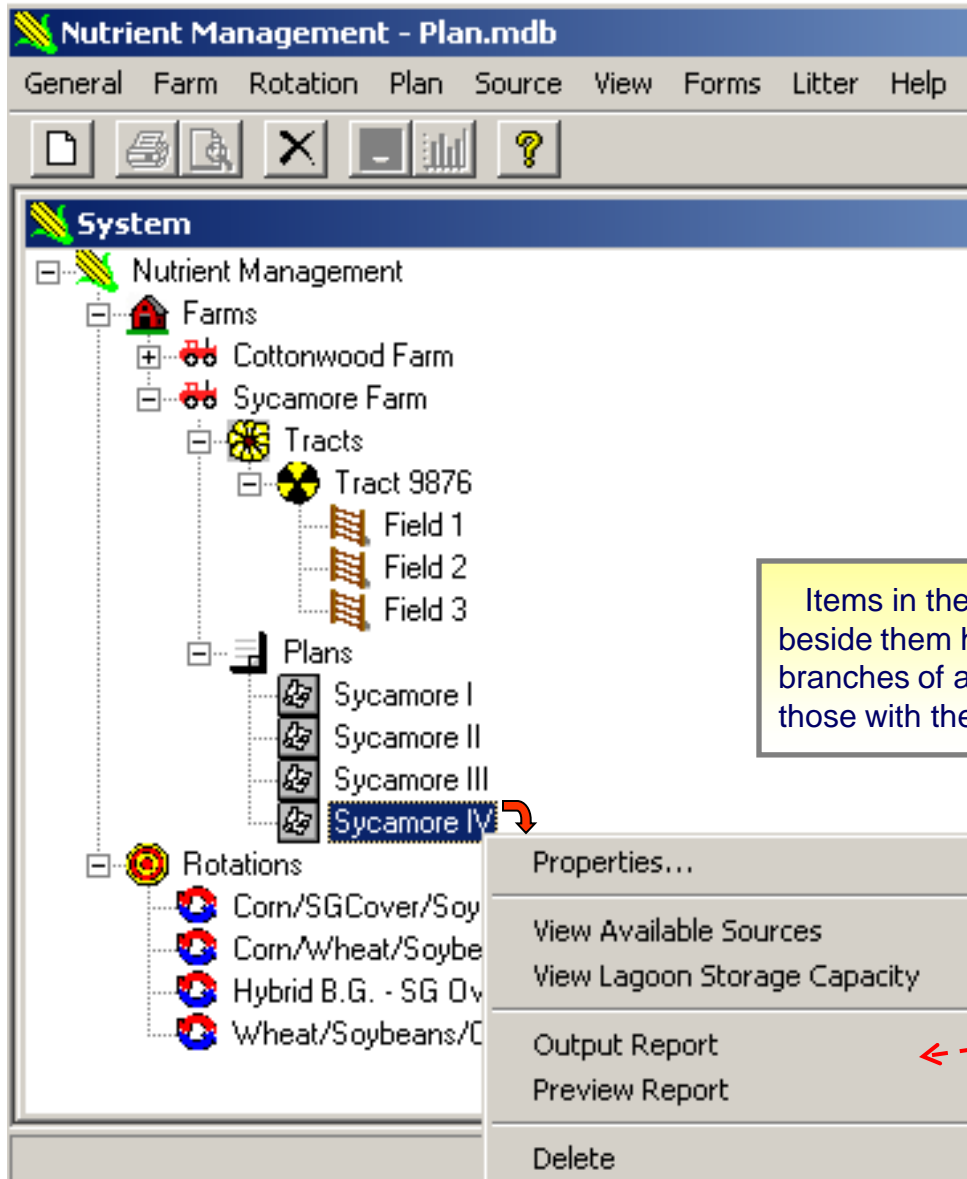
## 2) Main Nutrient Management Screen

### Toolbars

In general, use Toolbars from left to right to add plan information:





### 3) The System Tree – represents how data is organized



Each field is associated with a particular tract and each tract is associated with a single farm. Plans are also associated with individual farms.

Rotations are not farm specific and may be used in multiple plans for numerous farms.

Items in the tree with the  symbol beside them have additional branches of associated data, those with the  symbol do not.

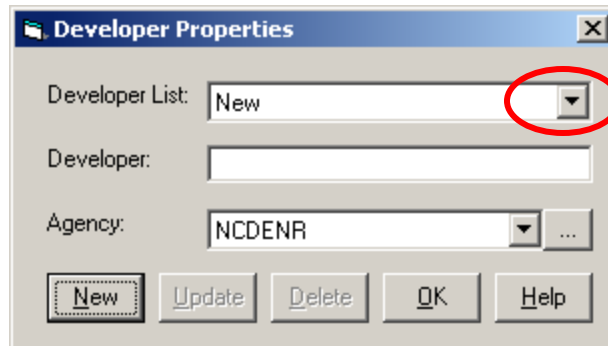
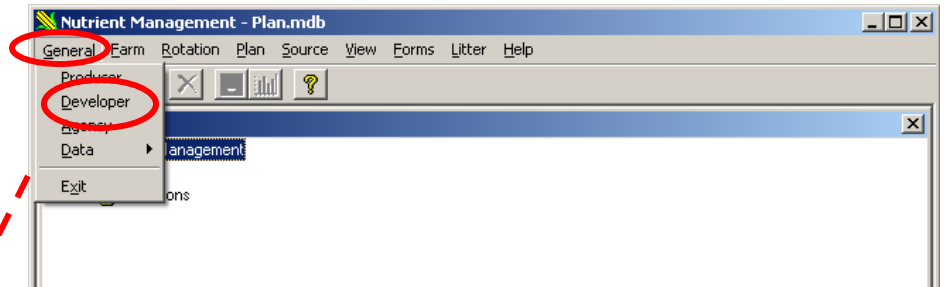
Manipulate items by pointing the arrow at the item and clicking the right mouse button. A pop-up menu will then appear with a list of items.

## 4) General: Developer Information

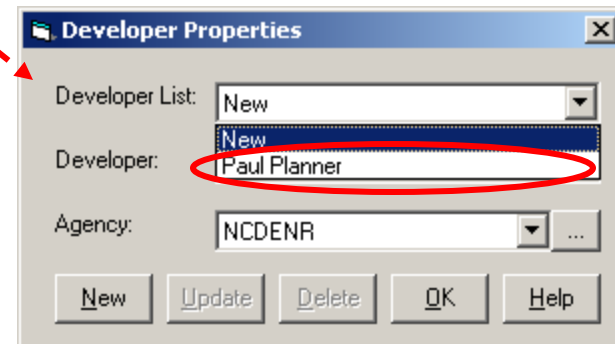
To view/select existing developer:

Click **General > Developer**

The **Developer Properties** dialog box will appear.

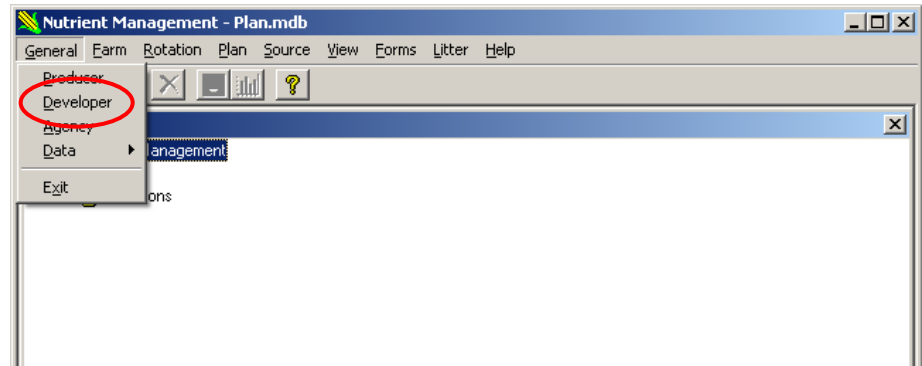


Select the desired **Developer** from the **Developer List**.



## 4) General: Developer Information

To add a new developer:

A screenshot of the 'Developer Properties' dialog box. It contains three input fields: 'Developer List' with a dropdown menu showing 'New' (labeled with a red '1'), 'Developer' with a text box containing 'Paul Planner' (labeled with a red '2'), and 'Agency' with a dropdown menu showing 'NCDENR' (labeled with a red '3'). At the bottom, there are five buttons: 'New' (circled in red and labeled with a red '4'), 'Update', 'Delete', 'OK', and 'Help'.

- 1) Click **New** or select **New** from **Developer List**
- 2) enter developer's name
- 3) select the appropriate agency
- 4) Click **Update** and the new developer is displayed in the list

A screenshot of the 'Developer Properties' dialog box after the developer has been added. The 'Developer List' dropdown now shows 'Joe Hudyncia'. The 'Developer' text box contains 'Joe Hudyncia', and the 'Agency' dropdown shows 'NCDENR'. The 'Developer' list is expanded, showing 'New' and 'Paul Planner'. The 'Agency' dropdown has a red circle around the '...' button.

Note:  
Use "..."  
button to  
add a  
**New  
Agency.**

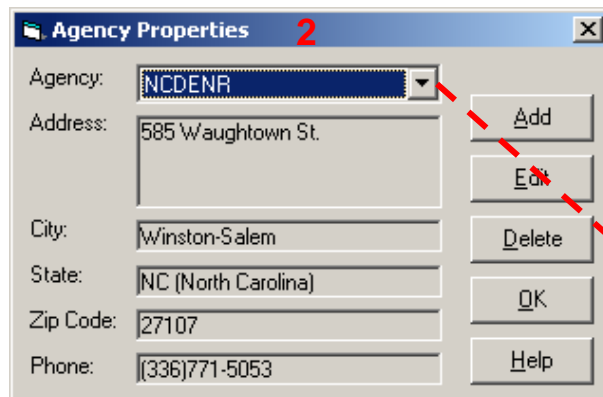
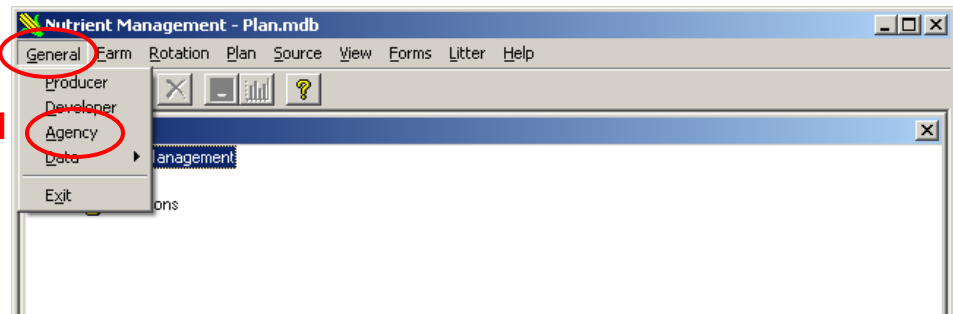
*Note: Before you can enter a developer name, you must enter the agency properties for that developer.*



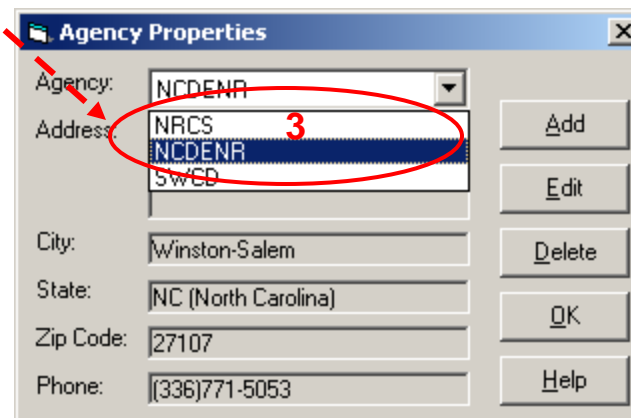
## 5) General: Agency Information

To view agency properties:

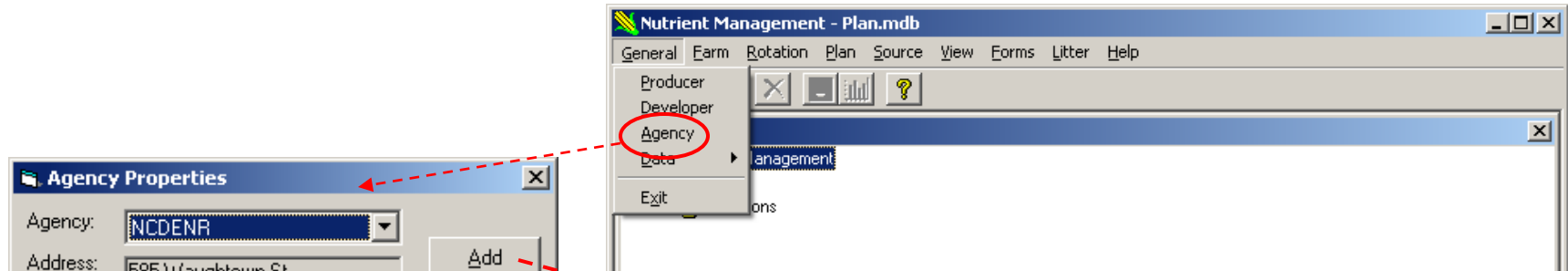
- 1) Click **General > Agency**
- 2) This opens the **Agency Properties** dialog box.



- 3) Select the desired **Agency** from the combo box.



## 5) General: Agency Information



The screenshot shows the 'Nutrient Management - Plan.mdb' application window. The 'Agency' menu item is circled in red. A red dashed arrow points from the 'Agency' menu to the 'Agency Properties' dialog box. Another red dashed arrow points from the 'Add' button in the 'Agency Properties' dialog box to a yellow callout box.

**Agency Properties**

Agency:

Address:

City:

State:

Zip Code:

Phone:

Buttons: Add, Edit, Delete, OK, Help

**To add a new agency click **Add**.**

**Add or edit information and Click **OK** to save and close.**

**To edit agency information click **Edit**.**

**Edit Agency**

Agency:

Address:

City:

State:

Zip Code:

Phone:

Buttons: OK, Cancel, Help

**New Agency**

Agency:

Address:

City:

State:

Zip Code:

Phone:

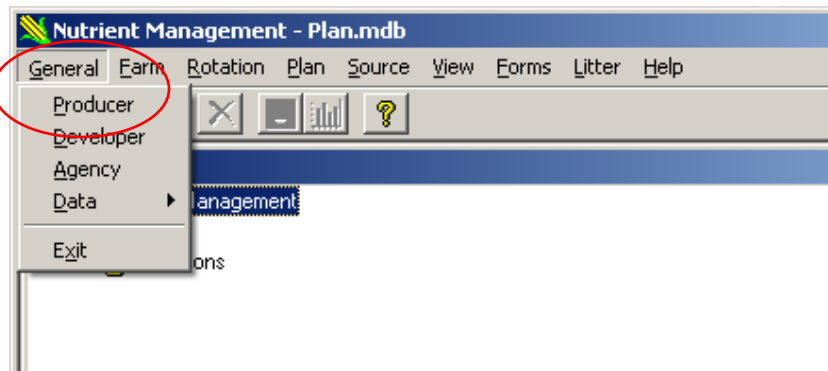
Buttons: OK, Cancel, Help

**Note: Use the **Delete** button to remove an agency and the associated information.**

## 6) General: Producer Information

View producer properties: Tab **General** > **Producer**

Select existing **Producer** or add a new one.



Add a new Producer:

Click **Add**, add information and click **OK** to save.

Edit Producer Information:

Select Producer, click **Edit** button.

Add/edit information and click **OK**.

Producer: Farmer, Mary K.  
Last Name: Farmer, Mary K.  
First Name: Jones, Mary B.  
Middle Name: K.  
Address: 345 Sycamore Lane  
City: Goldsboro  
State: NC (North Carolina)  
Zip Code: 23456  
Phone: (919) 555-1212

Buttons: Add, Edit, Delete, OK, Help

Last Name:   
Middle Name:   
First Name:   
Address:   
City:   
State: NC (North Carolina)  
Zip Code:   
Phone:

Buttons: OK, Cancel, Help

Note: Use Delete to remove a Producer from the list.

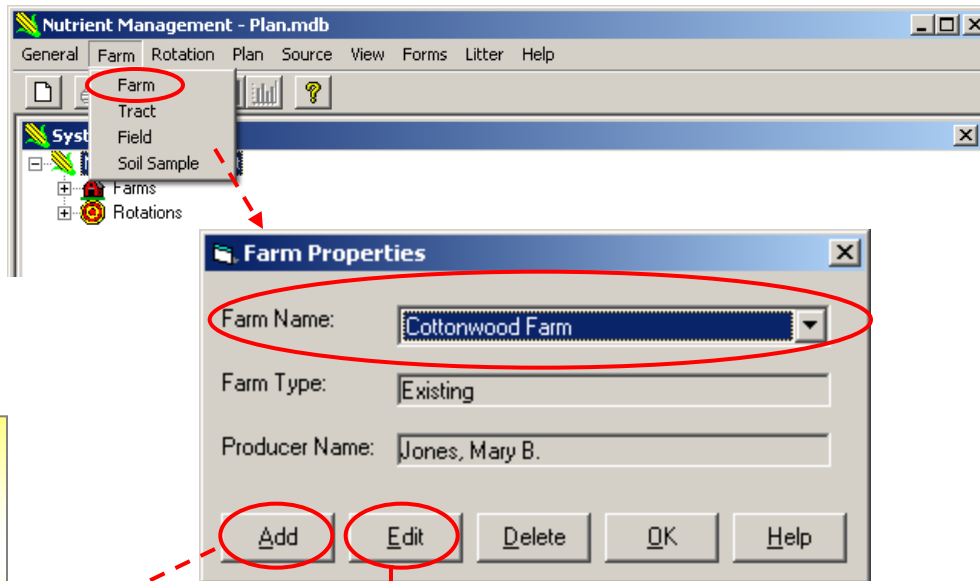
Last Name: Farmer  
Middle Name: K.  
First Name: Mary  
Address: 345 Sycamore Lane  
City: Goldsboro  
State: NC (North Carolina)  
Zip Code: 23456  
Phone: (919) 555-1212

Buttons: OK, Cancel, Help

## 7) Farm: Farm Information

To view farm properties:

Click **Farm > Farm** from the drop down menu. A **Farm Properties** dialog box will appear. View and select the appropriate name under **Farm Name**.



To add a farm:

Click **Add** to open the **New Farm** dialog box. Enter the **Farm Name** and select the **Farm Type\*** and **Producer Name\*\***. Click **OK** to save.

The 'New Farm' dialog box is shown with fields for 'Farm Name', 'Farm Type', and 'Producer Name'. The 'New Producer' button is highlighted with a red arrow pointing to it from the note below.

Note: \*A Producer Name must be selected before a farm can be added.

Note: \*Farm Type generally refers to animal operations and are described as **Existing**, **Expanding** and **New**. Select one of these three categories to describe the farm.

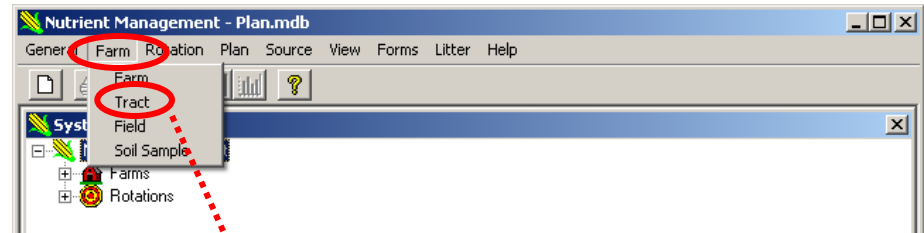
To edit a farm:

Click **Edit** to open the **Edit Farm** dialog box. Make the appropriate changes and click **OK** to save.

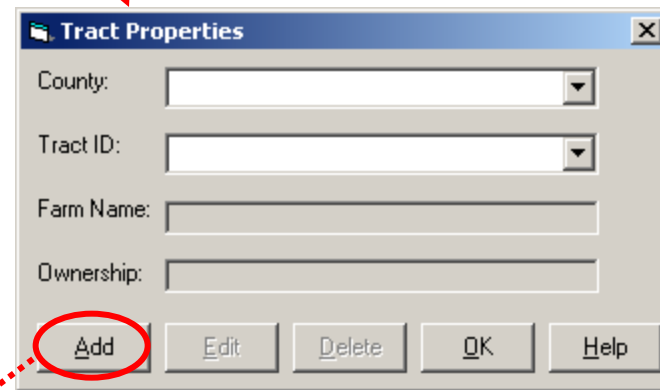
The 'Edit Farm' dialog box is shown with fields for 'Farm Name', 'Farm Type', and 'Producer Name'. The 'New Producer' button is highlighted with a red arrow pointing to it from the note below.

## 8) Farm: Tract Information

To view tract properties, click **Farm > Tract**.

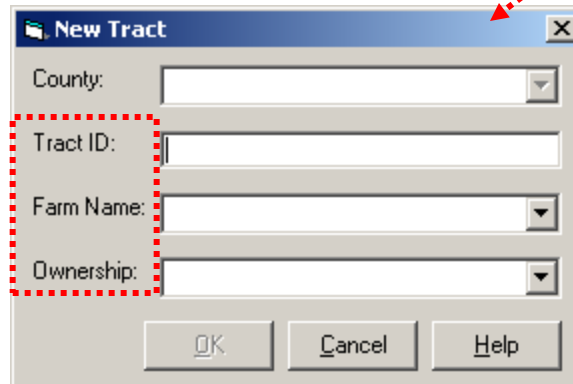


In the **Tract Properties** dialog box specify **County** and **Tract ID** (number). Farm name and ownership will display.



When data entry is complete, click the **OK** button.

To close this dialog box without saving changes, simply click the **Cancel** button.



To Add a New Tract:

Click **Add**.

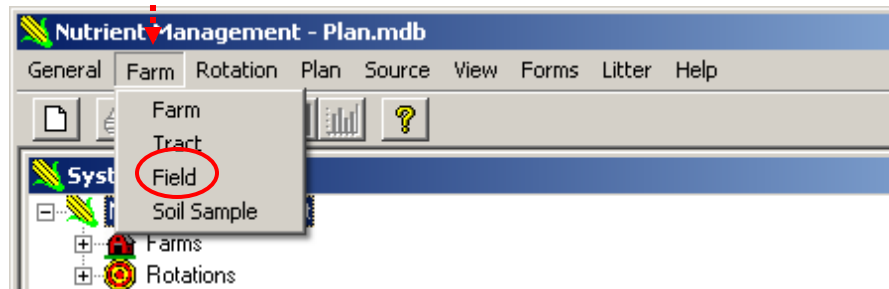
In the **New Tract** dialog box, enter the **Tract ID** and select the **Farm Name** and **Ownership** status.

Note: Tract ownership is either leased or owned. One of these two choices must be selected.



## 9) Farm: Field Information

### • Add a Field



To **add** a new field: select the **County** and **Tract**, then click **Add**.

Field Properties

County: Lenoir Tract: 1234

Field ID:

Soil Type:

Total Acres:  **Add**

Useable Acres:  Edit

Slope Type:  Delete

Leaching Index:  OK

P Assessment:  Help

Farm Name:

Waste Irrigation Properties

Maximum Applic. Rate (inches/hour)

Maximum Irrigation Amount/Event (Inches)

A **New Field** dialog box will appear.

New Field

County: Lenoir Tract: 1234

Field ID:

Soil Type:

Total Acres:  OK

Useable Acres:  Cancel

Slope Type: 0 - 2  Help

Leaching Index:

P Assessment: Unknown

Waste Irrigation Properties

Maximum Applic. Rate (inches/hr.)  0.35

Max. Amount/Irrigation Event (Inches)  1.0

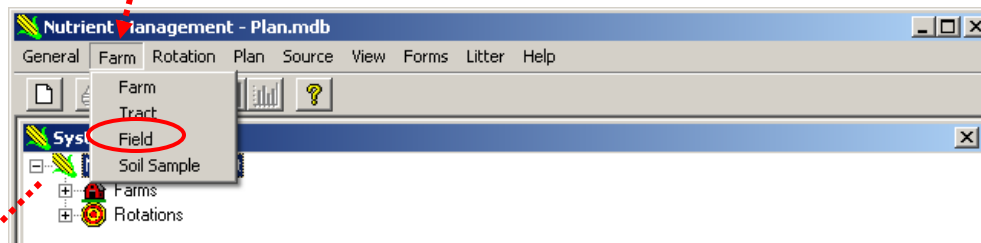
Enter the **Field ID**, **Soil Type**, **Total Acres**, **Useable Acres**, **Slope Type** (%) and other required information.

Click **OK** to save.

*Waste irrigation properties are based on irrigation group for a particular soil. These values will appear automatically.*

## 9) Farm: View Existing Field Information

To view field properties click **Farm > Field**.



In the **Field Properties** dialog box specify **County**, **Tract** and **Field ID**.

**Field Properties**

County: [ ] Tract: [ ]

Field ID: [ ]

Soil Type: [ ]

Total Acres: [ ] Add

Useable Acres: [ ] Edit

Slope Type: [ ]

Leaching Index: [ ] Delete

P Assessment [ ] OK

Farm Name: [ ] Help

Waste Irrigation Properties

Maximum Applic. Rate (inches/hour) [ ]

Maximum Irrigation Amount/Event (Inches) [ ]

Verify field information.

**Field Properties**

County: Lenoir Tract: 1234

Field ID: 1

Soil Type: Norfolk

Total Acres: 13.5 Add

Useable Acres: 13.5 Edit

Slope Type: 0 - 2

Leaching Index: 4.3 Delete

P Assessment Low OK

Farm Name: Cottonwood Farm Help

Waste Irrigation Properties

Maximum Applic. Rate (inches/hour) 0

Maximum Irrigation Amount/Event (Inches) 0

Use **Edit** to make changes to field properties.

Click **OK** to save.

Use **Delete** to remove a field.

## 10) Farm: Field Information – Leaching Index

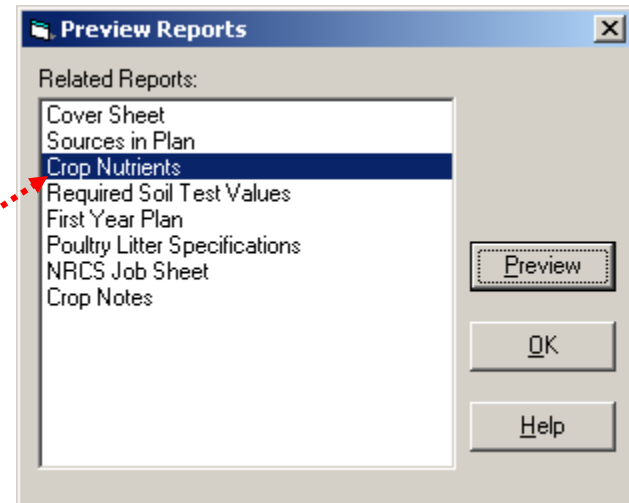
- Reference: NRCS FOTG, Section III  
<http://efotg.nrcs.usda.gov/toc.aspx?CatID=8562>

- Used for evaluating the potential for contaminating ground water with soluble nutrients (e.g. nitrogen)
- Estimates the degree to which water percolates below the root zone in certain soils
- Based on annual precipitation, hydrologic soil group & rainfall distribution data
- NM policy requires LI be used in selected watersheds to assess potential nitrate leaching

### Procedure:

- 1) Find the soil's hydrologic group.
- 2) Locate the Iso-leaching map for that group
- 3) From the map, based on the soil location, determine the LI

Note: The LI Guidelines for Recommendations will print with the **Crop Nutrients** report from NM software.

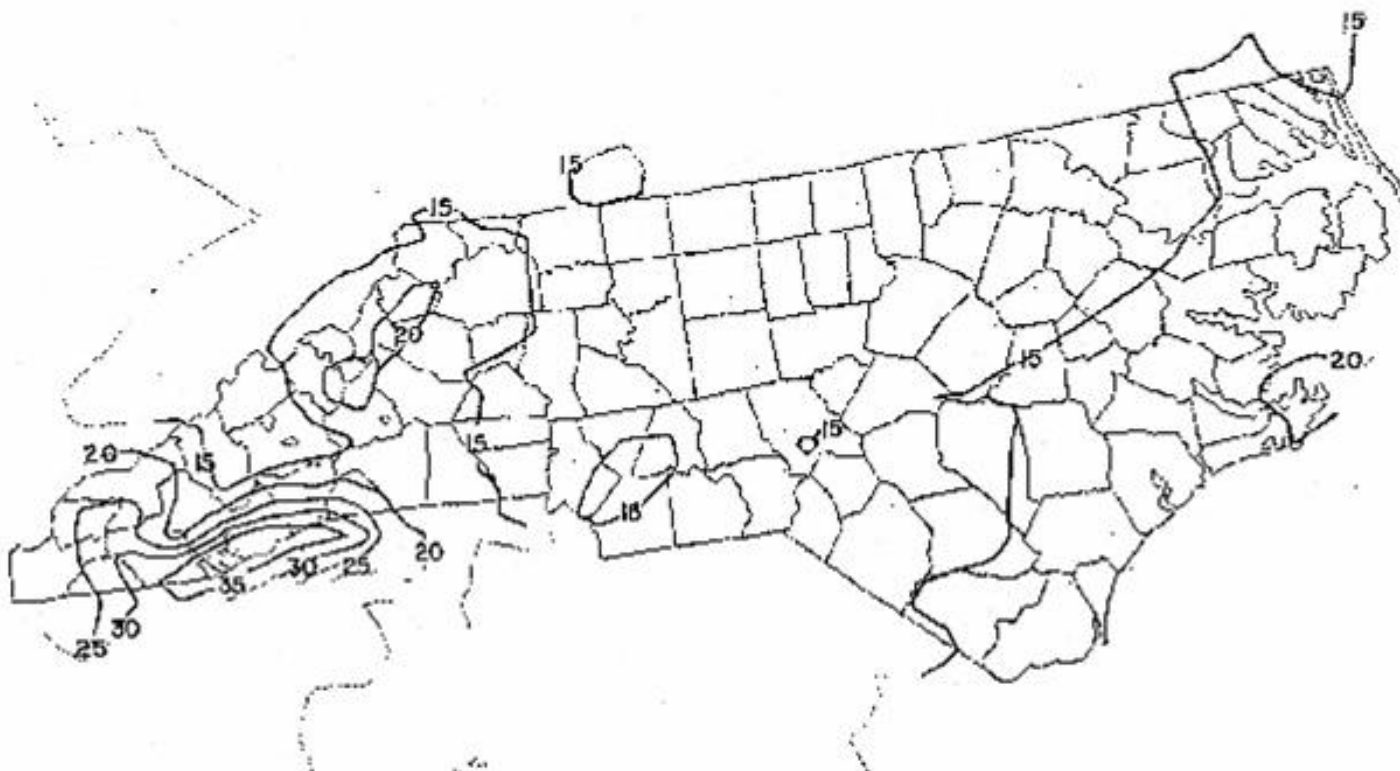


## 10) Farm: Field Information – Leaching Index

U.S. DEPARTMENT OF AGRICULTURE  
Natural Resources Conservation Service  
Raleigh, NC

NR160-0000 Technical Guide  
Section III  
February 2022

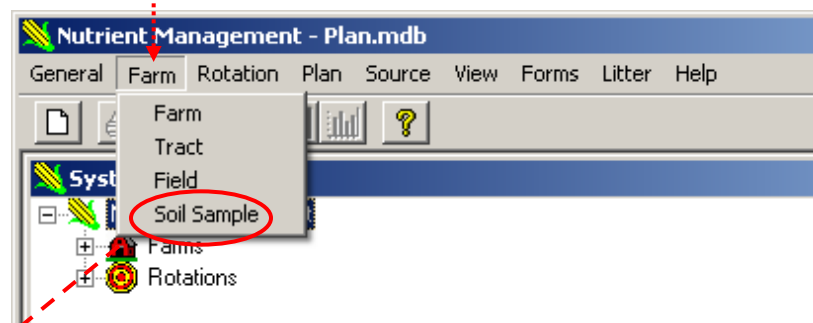
### LEACHING INDEX FOR HYDROLOGIC GROUP B North Carolina



## 11) Farm: Soil Sample Information

Manual Entry

Click **Farm > Soil Sample** to activate the **Soil Sampling Properties** dialog box.



Manual Entry:

- 1) Select **Farm Name**, **Tract ID** & **Field ID**
- 2) Enter **Sample No.**, **Date**, & **Sample Results** directly from Soils Report
- 3) Enter **Soil Class**
- 4) Enter liming info. under **Applied Lime**
- 5) Use **Save** to save data.



## 11) Farm: Soil Sample Information

### Import Soils Data

Use the Import button to import soil samples into the program if the report has previously been downloaded to your computer from the "NCDA&CS Agronomic Reports Online" web site as a CSV report file.

To Import soil sample information:

1) Click **Import**, 2) select the appropriate file path and .csv file name and then 3) click **Open**.

The 'Soil Sampling Properties' dialog box contains the following fields and buttons:

- Sample List:** New (dropdown)
- Sample No:** [text box]
- Sample Date:** [text box]
- Field Info:**
  - Farm Name: [dropdown]
  - Tract ID: [dropdown]
  - Field ID: [dropdown]
  - Soil Class: [dropdown]
- Sample Results:**
  - CEC: [0]
  - BS: [0]
  - Acid: [0]
  - pH: [0]
  - P-I: [0]
  - K-I: [0]
  - Ca: [0]
  - Mg: [0]
  - Mn-I: [0]
  - Zn-I: [0]
  - Cu-I: [0]
- Applied Lime:**
  - Amount (T/A): [0]
  - Year (yyyy): [0]
  - Month: [0] (dropdown)
- Buttons:** New, Import (circled in red), Save, Delete, Help, Exit.

The 'Open a Soil Sample Data File' dialog box contains the following elements:

- File Name:** MaryFarmer2009.csv
- Source Folder:**
  - C:\
  - Program Files
  - Nutrient Management (selected)
- Buttons:** Open (circled in red), Cancel, Help.

## 11) Farm: Soil Sample Information

Import Soils Data

Import Soil Sample Data

Sample List: **15732 20594**

Sample No: 15732 205912  
15732 20592  
15732 20594  
15732 20596  
15732 20611  
15732 92461

Sample Date: 15732 20594

Sample Results:

CEC: 0  
BS: 0  
Acid: 0  
pH: 0  
P-I: 0  
K-I: 0  
Ca: 0  
Mg: 0  
Mn-I: 0  
Zn-I: 0  
Cu-I: 0

Field Info:

Farm Name: Sycamore Farm  
Tract ID: 9876 - Wayne  
Field ID: 1  
Soil Class:

Applied Lime:

Amount (T/A): 0  
Year (yyyy): 0  
Month: 0

Buttons: Save, Import, Help, Exit

4) Enter **Farm Name**, **Tract ID** and **Field ID**

5) select the sample number from the drop-down **Sample List**

A **Soil Sampling Properties** dialog box will appear.

Import Soil Sample Data

Sample List: 15732 20594

Sample No: 15732 20594

Sample Date: 11/8/2008

Farmer, Mary K.  
345 Sycamore Lane  
Goldsboro, NC 23456  
Wayne County

Sample Results:

CEC: 11  
BS: 91.0  
Acid: 1  
pH: 6.1  
P-I: 352  
K-I: 116  
Ca: 69  
Mg: 17.0  
Mn-I: 480  
Zn-I: 538  
Cu-I: 863

Field Info:

Farm Name: Sycamore Farm  
Tract ID: 9876 - Wayne  
Field ID: 1  
Soil Class: Mineral

Applied Lime:

Amount (T/A): 1  
Year (yyyy): 2008  
Month: 3

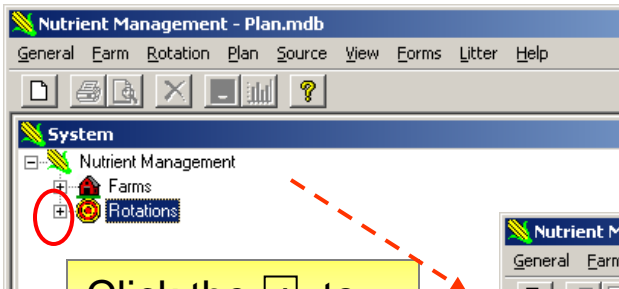
Buttons: Save, Import, Help, Exit


- 6) Double-check sample date
- 7) Enter the tons/ac., year and month under **Applied Lime**.
- 8) Click **Save**

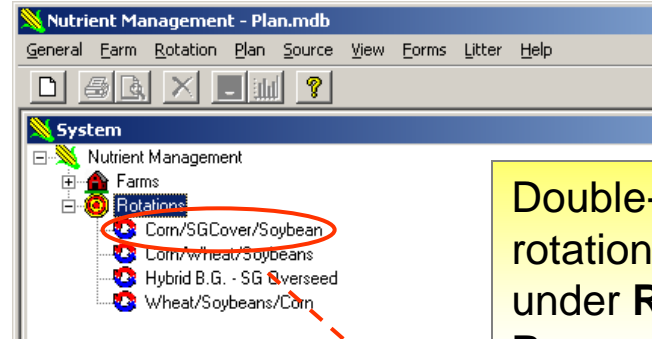
Continue adding and saving all samples. Use **Exit** when finished.

## 12) Rotations: View Existing

View and edit rotations from the  
**System Window**



Click the  to view existing rotations.



Double-click a specific rotation to view details under **Rotation Properties**.

**Rotation Properties -- Corn/SGCover/Soybean**

Rotation Name:

Crop List:

- Annual Ryegrass - Hay
- Annual Ryegrass - Pasture
- Bahiagrass Hay
- Bahiagrass Pasture
- Barley, Grain
- Cabbage/Broccoli
- Caucasian/Old World Blue
- Caucasian/Old World Blue
- Cereal/Annual Rye O/S,
- Cereal/Annual Rye O/S, C
- Common Bermudagrass H
- Common Bermudagrass P.
- Corn, Grain
- Corn, Silage
- Corn, Sweet
- Cotton

Number of Crops:

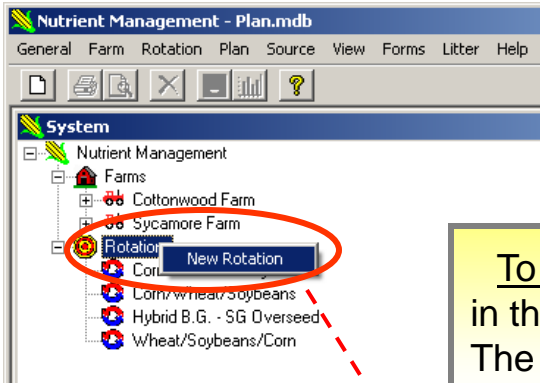
Years of Rotation:

Crop Year:

Crops in Rotation:

Crop	Start Month	End Month	Year
Corn, Grain	2/15	6/30	1
Small Grain Cover	9/1	3/31	1-2
Soybeans, Full Season	4/1	9/15	2

## 13) Rotations: Create New



To add a new rotation: right-click on **Rotations** in the System Window and select **New Rotation**. The **New Rotation** dialog box will appear.

New Rotation

Rotation Name:

Crop List:

- Annual Ryegrass - Hay
- Annual Ryegrass - Pasture
- Bahiagrass Hay
- Bahiagrass Pasture
- Barley, Grain
- Cabbage/Broccoli
- Caucasian/Old World Blue
- Caucasian/Old World Blue
- Cereal/Annual Rye O/S,
- Cereal/Annual Rye O/S, C
- Common Bermudagrass H
- Common Bermudagrass P.
- Corn, Grain
- Corn, Silage
- Corn, Sweet
- Cotton

Number of Crops:

Years of Rotation:

Crop Year:

Crops in Rotation:

Crop	Start Month	End Month	Year
------	-------------	-----------	------

OK Cancel Help

## 13) Rotations: Build a New Rotation

The screenshot shows the 'New Rotation' dialog box. The 'Rotation Name' field contains 'Corn silage / Small grain silage' with a red '1' next to it. The 'Crop List' on the left includes various crop types, with 'Small Grain, Silage' selected. A red '2' is next to the 'Number of Crops' field (value 2). A red '3' is next to the right arrow button between the crop lists. A red '4' is next to 'Small Grain, Silage' in the 'Crops in Rotation' table. A red '5' is next to the 'Crop Year' dropdown menu, which is circled in red.

Crop	Start Month	End Month	Year
Corn, Silage	2/15	6/30	1
Small Grain, Silage	9/1	3/31	1

*Note: Use the “<<” button to remove a specific crop from the **Crops in Rotation** list.*

In the **New Rotation** dialog box:

- 1) Name the rotation under **Rotation Name**.
- 2) Specify the **Number of Crops** and the total **Years of Rotation**.
- 3) Move each crop (in order) to the **Crops in Rotation** box by selecting it from the **Crop List** and clicking on the “>” button. The **Crop**, **Start Month**, **End Month** and **Year** will fill-in automatically.
- 4) Select the crop name that has just been added, and
- 5) Click on the **Crop Year** drop down box to identify the year for that crop in the rotation. Repeat this for each crop in order of appearance in the rotation.